DOCUMENT RESUME

ED 148 330 IR 005 386

AUTHOR Sutton-Smith, Brian
TITLE A Developmental Psychology of Children's Film Making. Annual Report No. 1, 1974-75 and Annual Report No. 2, 1975-76.
SPONS AGENCY Ford Foundation, New York, N.Y.
PUB DATE 76
NOTE 52p.

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS Annual Reports; *Child Development; Children; *Developmental Psychology; Elementary Education; *Film Production; Films; *Media Research; Observation; Psychometrics

ABSTRACT

The first and second years, 1974-76, of a research project on the effects of filmmaking upon children who make the films are reported here. The aims of the research were to establish: (1) the processes through which the children proceeded in the acquisition of filmmaking mastery, (2) the relationship of instructional technique to these forms of mastery, and (3) the perceptual, cognitive, and affective changes in the children which resulted from this type of learning experience. Subjects were elementary-age children, who attended a workshop established by the young Filmmakers Foundation. There was an entirely new population in the second year. Some generalizations have emerged: (1) those volunteers who came to filmmaking and stayed in it were different from those who dropped out; (2) the longer the children stayed in the filmmaking workshop the more adequate their analytic skills became. In an animation training session, some striking differences appeared between the younger and older children. This study is only in the preliminary stage of analysis and most of the data are yet to be analyzed. What the results should indicate, however, is the kind of variables most strongly associated with the cognitive change scores. (VT)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED148330

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

A DEVELOPMENTAL PSYCHOLOGY OF CHILDREN'S FILM MAKING

Annual Report #1. 1974-1975

Annual Report #2. 1975-1976

by

Brian Sutton-Smith
Project Director

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Brian Sutton-Smith

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

1 R005386

Introduction

This report covers the first year of research activity on the effects of film-making upon the children who make the films. The research has been carried out as a collaborative activity between the Young Filmakers of 4 Rivington St., New York, and the program in Developmental Psychology at Teachers College, Columbia University. The research activity is funded by the Ford Foundation. The teaching activity at the film workshop has been funded by other foundations.

The Practical Situation

Beginning in October of 1974, the Young Filmakers Foundation established a film maker's workshop at Ludlow Street. Children attended the workshop from some school classes, but the most constant source of child film-makers occurred in the after school voluntary program. The type of teaching which was given is described in general outline in The Young Filmmakers and The Young Animators (Larsen, Hofer, Barrios, etc.) The funding of the teaching program meant that the teachers were constantly seeking better and more effective methods of conveying film making procedures to the child volunteers.

The aims of the research were to establish (a) the processes through which the children proceeded in the acquisition of film making mastery (b) the relationship of instructional technique to these forms of mastery (c) the perceptual cognitive and affective changes in the children which resulted from this type of learning experience.

During this first year research has been conducted at the workshop and the New York elementary school (P.S. 3). A decision had to be made rather early about the type of research that would be possible at Ludlow given the character of the teaching (not under the researcher's control) and the nature of the situation (overcrowded and with little space left for non-participatory research procedures). It was decided that at least in the beginning the wisest approach would be observational and

documentary, and this has been in effect the major procedure throughout this first year. Our intention here has been to encode with as much detail as possible each step through which the children proceeded in their acquisition of mastery. In addition, however, we have sought to hypothesize the type of perceptual-cognitive changes which might occur as a result of the activities and have used a pre and post testing program, which we will term here the psychometric research program, as distinct from the documentary program of descriptive work mentioned above. As our own knowledge has increased, however, we have continually sought for improvements on this psychometry with the aim of developing experimental procedures which could give us a more exact understanding of the children's development. At P.S. 3 the program which was established towards the end of this academic year, we have been able to work with a smaller number of younger children and to establish a greater control of all research procedures.

The Research Procedures

In brief our three approaches are (1) Observational
(2) Psychometric
(3) Experimental

Here we will give only a summary view of the concepts and steps that have been taken: more detail being given in the summary reports contained in the index. These various summary reports are not meant in any way to be definitive. They represent position papers developed by the student researchers during the year for the research group's discussion and further development. With some exceptions we are not discussing results in this report, because the assessment period from the first year's work is due to take place between July and October, before the commencement of the next round of research activities. The appendices do, however, indicate the variety of research activities we have undertaken and the complexity of the task upon which we are engaged. Perhaps one can better grasp our situation by imagining what it would be like in some other subject-matter (say arithmetic, say history) if no one had ever systematically studied the teaching of this subject to children, and our group was then charged with

digesting and fully comprehending the matter as well as indicating all its psychological effects in three years! Consider the condition of children learning to read which has been studied for 50 years at the expenditure of billions.

1. Observational Procedures

An inventory of possible topics for our observation is given in Appendix 1. This inventory prepared by Dr. William Walsh and Frank Eadie indicates the complexity of the tasks before us. After considerable early discussion and pilot study it was ultimately decided to pay closest attention to the nature of the creative process in film-making as it developed in a small sample of the children available at Ludlow. The major steps around which we would focus observation were to be:

(a) the generation of the original idea
(b) the preparation of the script
(c) the development of the shot list
(d) the making of the movie
(e) the completed film
(f) the editing of the movie
(g) the addition of sound
(h) the final film

To this end we attempted to set up a sequence of observational procedures which would permit us to observe our sample of children as they moved through each of these steps. The usual random or time sampling procedures were inadequate here as the children turned up on a voluntary basis and could quit the program at will. Furthermore our inability to predict the specifics of the general teaching procedure and the specifics in teacher-child interaction made it impossible to be sure that at any given moment we would be observing the child who was making the critical steps in his development. We have therefore, step by step, moved towards an attempt to work out an increasingly co-operative strategy with the teachers who in their turn have become, step by step, aware of the sort of items of response and behavior which indicate creative forward movement in the children. This has meant that most of the documentaries taken at Ludlow are with some exceptions incomplete and fragmentary despite everyone's best intentions. As the year proceeded however and our collaboration advanced we did achieve rather more adequate documentation of a pilot group.

Furthermore, when several of the teachers began work at P.S. 3 (Susan Zeig and Carlos Baez) with a small number of children we were able to almost completely monitor every statement of teachers and children as well as video tape a large sample of the important behaviors.

What we are aiming for in the Fall is a situation in which the teachers themselves are sufficiently aware of the important moments of concentration and change in the child that they can signal one of the observers (we use written observations and video taping procedures), or can themselves conduct a marginal interview with that child. It is our good fortune that the teachers (Susan Zeig, Carlos Baez, Pedro Rivera, Jerry Lindhal) have themselves become intrigued by the causal issues that are so interesting in this area. In effect, one wants not only to see what is happening successfully but always to ask the child, why did you make that choice, where did you get that idea, how were you able to do that? While reflective abstraction of this sort is not always easy for children, it is essential in tracing out the steps by which children develop creatively.

A major project for our assessment period (July-October) is to adequately analyse what we already have discovered from over 70 hours of video tape recording at Ludlow, and from intensive 3 month recording at P.S. 3. Some of the preliminary encodings of the processes through which the children proceed are to be found in the following appendices.

Appendix 2: by Frank Eadie, which indicates some of the concepts developed to help in our understanding of how children create the ideas from which their films develop

Appendix 3: by Frank Eadie, several papers which focus both on the descriptive and theoretical issues involving the very important editing process

Appendix 4: by Joy Dryer, a technological coding system which is a list for scoring the characteristics of children's films. It is intended that this list would be the basis of key punch procedure for scoring films so that their characteristics can be computer processed

Appendix 5: by Gil Botvin, a similar computer geared list of the narrative or content characteristics of the children's films.

Appendix 6: A transcript from one video tape documentary indicating the type of data that we have available on some of the work at Ludlow. This particular tape is from a group that we have been studying intensively these past four months. The transcript is made by Dr. W. Walsh.

In developing these descriptive accounts (encoding procedures) for children's film making we have found our greatest assistance has come from the teachers themselves in concert with the directors of Young Filmakers. To feed our observations back through this sieve of experience has led to some of our most valuable articulations. The experts themselves have often not thought of these matters in the detail required for a research accounting, and we ourselves have not always had the perspective necessary to evaluate some of our own results. We intend to continue to use this panel of experts technique as a major plank of our work. Although student researcher names are appended to the above appendices it should be made clear that each statement (though their task) was a group outcome of both teachers and researchers.

2. Psychometric Procedures

Here we were concerned to hypothesize and test for the competences which would be likely to be enhanced by the process of learning how to make films. We assumed that there might be changes in perceptual competences, that is in the child's capacity to notice details and to discern hidden aspects of reality which may not have been so obvious beforehand. To this end we included Witkin's embedded figures test and the Goodenough-Harris Draw a Man test. These and the tests to follow were fully described along with their functions in the original grant request. To test for cognitive organization we relied upon the performance section of Wechsler Intelligence Scale for Children, in particular the sections of picture arrangement and picture completion and the block designs. To tests for shifts in creativity we used the Torrance Tests of Creative Thinking, in particular the figural section of that test. As a test of the possibility that this experience in concentrated and persevering but self initiated work might have consequences for personality and character we used the Locus of Control test, which essentially reveals any change in the individual's sense of personal autonomy.

Our testers were Peter Hunt and Susan Spielberg (and more occasionally Marta Kuc). Thirty children were pretested at Ludlow and those that lasted in the project (or did not) are now being pursued for post testing. It has to be emphasized that unfortunately in a volunteer program of this sort, it is not always easy to locate the subjects. Although there is no control group, logs of the amount and kind of activity were kept throughout, so that the possibility exists of differentiating within the group between those having varying kinds of film experience. These logs were kept by the teachers under the supervision of Carlos Baez. Similarly at P.S. 3, the same tests were given along with verbal intelligence tests (which were more relevant to this population), and in that case it was possible to also test a control group of similar subjects who were not given the film making experience. Much to our surprise we found these younger children (8 to 9 years), not particularly enthusiastic about the film project so that we had a most difficult time in obtaining the necessary parental permissions. Subsequent to the production of several films by the children and the showing of these in classrooms the attitude has changed rather completely and we anticipate no such problems when we begin again at P.S. 3 in the fall. In addition to the 12 members of the film group at P.S. 3 (and 12 controls), a further population of 24 was sought for the same testing and these will be offered the opportunity of film experience in the Fall.

It should be mentioned that under Dr. Walsh's direction strong efforts were made to make the P.S. 3 facility suitable for the project, including plastering, painting, the building of editing enclosures etc. This work was carried out under the supervision of architect student, Debbie Snow and included effort by Lily Shohat, Gregory Vaughn, Kenneth Frey and Tony Russo, all of whom were also subsequently involved either in the observational work or the analysis of video tape protocols. Although this work was done with the permission of the Principal, John Melser, our efforts to improve the fabric of the classroom (which was old and rotting), were opposed by the School Board when they became apprised of them. So the room as now existing is plastered but not painted. Still, as it exists it is suitable for the experimental pedagogy that we intend to introduce in the Fall.

3. Experimental Procedures

Our experimental procedures grew out of an interest in the children's perceptual and cognitive competence as measured by tests that seemed even more specifically relevant to the film making procedures than the tests with which we began above. These were tests of spatial concepts, camera position, the coordination of perspectives, camera movement and editing. In addition we were interested in testing the children's competence in the management of levels of narrative (The Maranda levels). These tests are described in detail in Appendix 7, which is a result of the work of Dan Mahony and based in part on the directions suggested by Dr. W. Walsh.

These various measures were developed during the project as a result of our experience with the actual film making. In a sense, they are also psychometric techniques as in the measures of the previous section. However, what Mahony did to change the character of the testing was to discover the use of the video machine as itself a way of quickly testing children. All of the tests mentioned in Appendix 7, are presented to the children on video tape.

In Appendix 8, the Videotesting Program, Mahony presents the character and results of pilot testing of 16 subjects across 17 separate measures. The results show clearly the value of this innovative approach to understanding the many complexities involved in learning about film making procedures.

Prospect

As a result of the assessment period during July-August and September we expect to have a series of reports ready in the work to date. There will be a detailed accounting of our documentary work both at Ludlow and P.S. 3 with the major conclusions from that experience with respect to the creative steps and alternatives that are taken during film making. There will be the results of the psychometric testing which are being handled by computer and will give us the scores across all tests. There will be analyses of variance for pre and post testing, by age and sex and correlations

across all measures in order to see what in fact covaries in this wide ranging battery. (See Appendix 9) In addition there will be a preliminary scoring of the children's films in order to reveal their characteristics (technological and narrative) so that we can speak objectively of the first film. It is an important developmental objective to be able to establish such a baseline from which further developments take place. Some 30 such first films are already available from the Ludlow project. In addition there will be a more comprehensive accounting of the type already briefly presented by Mahony in Appendix 8.

Following the assessment of all this material in September, it is our intention in the Fall, to proceed to a much more thoroughly systematic documentation of the creative steps in film making at Ludlow, now being able to focus our efforts more carefully on the critical points revealed in the documentation of the first year. At P.S. 3 we hope to experiment with actual teaching techniques, with separate groups of children. Essentially we have decided to focus on the differential effects of technique on promoting the processes and organization of visual sequencing. This we have gradually decided is the heart of the matter psychologically speaking. That is, the child who undergoes the intensive sequencing experiences of shot listing, shooting and editing, becomes an individual much more competently organized in the management of internal visual imagery. This is our major hypothesis and it is this we will pursue in the following year.

Appendix 1
FRANIL

Observation - Activities

1. Medium Selection
   - Which comes first: Plot or medium or topic
   - Basis for medium choice

2. Topic Selection
   - Why this topic and not some other one?
   - How does one look for a topic - does one look?
   - Source of Topic

3. Topic Development
   - Search through books
   - Discussion with teacher, peers

4. Narrative
   - Description of story

5. Shot List
   - Translation from writing and/or thought to organized sequence of events for filming

6. Story Board
   - Animation, Cartoons

7. Script - Dialogue

8. Preparation for Shooting
   - Organize and select actors = recruit actors = (r.a.)
   - Draw/construct characters
   - Recruit Cameraman

9. Props and Costumes
   - Selection
   - Gathering
   - Construction

10. Scheduling Production
    - Coordination of actors
    - Props

11. Scenery
    - Location Selections
    - Set-up - Props

12. Lighting
    - Selection - Quantity
    - Gathering
    - Set-up - location

13. Acting (Specify Character, Name and Role)
    - Rehearsing
    - Receiving Direction
    - Doing Takes
    - Buffooning

14. Directing
    Prop and Costume Gathering
    Scenery
    Camera Man
    Location/Angle
    Movements
    Actors
    Editing

15. Camera - Animation
    Focusing
    Framing
    Choice of Shot
    Mounting Camera
    Shooting

    Camera - Live Action
    A) Focus
    Position (Location) - Choice of Shot
    Movements: Pan
    Dolly, etc.
    Framing in Terms of Content

    B) Balancing
    Relation to Moving Subjects
    Framing in Terms of Content
    Sense of Distancing
    Objectifying environment and subject relationship

16. Shooting
    Repeat Shot

17. Editing
    A) Sequencing of Shots (Ordering)
    Review of Film in Viewer
    Deleting (Camera Errors, etc.)
    Frame by Frame Analysis
    Shot by Shot Analysis
    Splicing Leader
    Connecting Pieces
    Separating Pieces

    B) Timing of Movements Within Shot
    Timing of Event in Relation to Length of Movie
    Composition
    Lighting
    Shots - Close, Medium, Long

18. Film Status Review
    Determination of Tasks To Be Completed
    Updating of Shot List, Script, etc.

19. Viewing of Film
    - Shows To Audience
    - Receives Criticism
    - Compares Final Product With Original Intent
    - Shows To Friend
    - Shows To Teacher

20. Modes of Interactions

    Criticizing
    Self Evaluation, Evaluation of Others, Evaluation of Film
    Others Evaluation of Actors, Film etc.

    Directing
    Orders Others, Organizes; "Do this, do that."

    Advising
    Suggestions, "Let's try, why not do ..."

    Instructing
    "In Order to, For film making ..."; Approval/Disapproval

    Asking
    Requesting Information, Assistance, or Materials

THE DEVELOPMENTAL PSYCHOLOGY OF FILM MAKING: INFORMATION PROTOCOL

Film-making Interest Questionnaire

I. 1. Why did you come to this place? (or: Why do you want to go to Young Filmaker's?)

2. Have you ever made films before? Yes ☐ No ☐

3. Have you ever seen anybody make a film before? Yes ☐ No ☐

II. 4. What is a filmmaker?

5. How do you think a person makes films?

6. (Repeat answer to #5, then ask:) Is there anything else do you think somebody should be good at to make films?

7. What do you think movies are for? (What use are they?)

III. 8. Do you like watching movies? Yes ☐ No ☐

How much?
____ a. "a whole lot," etc.
____ b. "a lot," a fair amount of enthusiasm.
____ c. "Some, a bit," indifferent.
____ d. Moderate degree of disagreement.
____ e. Violently opposed to watching movies altogether.

9. Which of the following kinds of movies do you like the most? the least?

10. Why do you like _____(most liked) more than _____(least liked)?

11. How often do you go to the movies?

12. What kind of TV shows do you like to watch?

13. How often do you watch TV? (Hours per day, times per week)

IV. 14. Do you think you would like to be a film maker when you grow up? (If "yes," why?, if "no," what would you like to be?)

15. Would you rather make films as a hobby or a career?

16. What do you think your parents would like you to become?

Individual Testing Data; Film Project

Name _____ DOB _____ Age ___ Sex ___ Sib. Stat. _____

Grade _____ School _____ School Standing _____ Time in Film Program _____

WISC

	Pre-test	Post-test	Change
Verbal			
Information	_____	_____	_____
Comprehension	_____	_____	_____
Arithmetic	_____	_____	_____
Similarities	_____	_____	_____
Vocabulary	_____	_____	_____
Digit Span	_____	_____	_____
Performance			
Picture Completion	_____	_____	_____
Picture Arrangement	_____	_____	_____
Block Design	_____	_____	_____
Object Assembly	_____	_____	_____
Mazes	_____	_____	_____
Verbal Total	_____	_____	_____
Perf. Total	_____	_____	_____
IQ Equivalent	_____	_____	_____

Embedded Figures Test

Adult: Pre-test(Form ___) _____ Standardized _____
Post-test(Form ___) _____ Standardized _____
Change _____ Standard. _____

Children's: Pre-test _____ Standardized _____
Post-test _____ Standardized _____

Draw-A-Man Test (Harris-Goodenough Quality Scale)

		Scale Score	Percentile Rank
Pre-:	Man	_____	_____
	Woman	_____	_____
	Average	_____	
Post-:	Man	_____	_____
	Woman	_____	_____
	Average	_____	

Torrance Tests of Creative Thinking

Verbal	Score	T Score
Fluency	_____	_____
Flexibility	_____	_____
Originality	_____	_____
Figural		
Fluency	_____	_____
Flexibility	_____	_____
Originality	_____	_____
Elaboration	_____	_____

IPAT CPQ

Factor	Sten
A	_____
B	_____
C	_____
D	_____
E	_____
F	_____
G	_____
H	_____
I	_____
J	_____
N	_____
O	_____
Q3	_____
Q4	_____

Nowicki-Strickland Scale of Internal-External Control

Pre-School-Primary _____ High School _____

Appendix 4

JOY

Project Name: Young Filmakers

I. BASIC IDENTIFICATION INFO:

1. Filmmaker's (coded) number
2. Filmmaker's age (when film was made)
3. Filmmaker's date of birth
4. Filmmaker's sex
5. Filmmaker's ethnic group
6. Filmmaker's birth order
7. Filmmaker's school grade
8. Filmmaker's native language
9. Other
10. Coder's initials
11. Date coded
12. Reel Number
13. Film's sequence number (x/out of y total #)
14. Date film made (mo/yr)
15. Film speed:
    1 = 18 fps; 2 = 24 fps; 3 other
16. 1 = B & W; 2 = color; 3 = mixed
17. 1 = silent
    2 = sound with background music only
    3 = sound with narration only
    4 = sound - mixed music and narration
18. Film Type:
    Live: 1 = fiction
    2 = non-fiction
    3 = other
    Animation: 4 = photo
    5 = cut-out
    6 = drawing
    7 = clay
    8 = other
19. Supporting Materials available:
    1 = treatment
    2 = story board
    3 = script
    4 = videotape
    5 = all test releases

II. BASIC FREQUENCY COUNTS

1. total running time
2. total number of settings (physical)
3. total number of scenes (psychological, i.e. meaningful motivational unit)
4. total number of sequences (i.e. related series of shots)
5. total number of shots
6. average length per shot

III. CAMERA TECHNIQUE

A. shot types

7. Setting:
   1 = interior 2 = exterior
8. Camera Level: 1 = low
   2 = medium
   3 = high

III. CAMERA TECHNIQUE (con.)

9. Camera Angle
   1 = high
   2 = low

10. Distance:
(camera position)
   1 = long shot
   2 = medium long
   3 = medium
   4 = medium close-up
   5 = close-up
   6 = error - technical
   7 = error - content

11. Character Count:
(main number)
   1 = 1 person
   2 = 2 people
   3 = 3 people
   4 = more

B. 12. Focus of Action: (of subject)
   1 = front
   2 = back
   3 = side
   4 = other
   5 = error - technical
   6 = error - content

C. Change of Perspective:

13. Lens Size:
   1 = wide angle
   2 = normal
   3 = telephoto

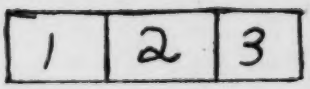
14. Focus of Lens:
   1 = sharp
   2 = fuzzy

15. Depth of field:
(aperture size)
re: S
   1 = shallow
   2 = normal
   3 = deep

16. Zoom = Change of Perspective:
   1 = in
   2 = out
   3 = error in technique

D. Framing:

17. Static S or action location:
   1 = left
   2 = middle
   3 = right
   4 = whole frame
   5 = error-out of frame



18. Moving S or action:
   1 = within frame
   2 = moving out of frame

19. Moving S or action to a goal:
   1 = goal reached
   2 = goal not reached

III. D. Framing (continued)

20. Form of composition
    1 = appropriate
    2 = inappropriate

E. Camera Movement

21. pan:
    1 = left to right
    2 = right to left
    3 = blur
    4 = up
    5 = down
    6 = error - technical
    7 = error - content

22.
    1 = left
    2 = right
    3 = forward
    4 = backward
    5 = up
    6 = down
    7 = error - technical
    8 = error - content

23. Unsteady camera (error)
    1 = yes

24. black (error)
    1 = yes

25. black (as editing transition)
    1 = yes

F. Sound

26. narration:
    1 = titles
    2 = voice over
    3 = matched
    4 = unmatched

27. Dialogue:
    1 = dubbed
    2 =
    3 = matched
    4 = unmatched
    5 = single voice
    6 = multiple voice

28. Music:
    1 = instrumental
    2 = percussion
    3 = vocal
    4 = matched timing
    5 = unmatched timing
    6 = matched meaning (quality)
    7 = unmatched meaning

29. Sound effects:
    1 = matched timing
    2 = unmatched timing
    3 = matched meaning (quality)
    4 = unmatched meaning

G. Lighting

30. Natural — 1 = yes

31. Number:
    1 = front
    2 = back
    3 = side
    4 = multiple

H. Effects

32. Fade: — 1 = in; 2 = out
33. Dissolve: — 1 = used
34. Wipe: — 1 = push-off; 2 = other
35. Superimposition: — 1 = used
36. Freeze Frame: — 1 = used
37. Montage: — 1 = used

other — 1 = used

IV. EDITING

A. 38. Cut: 1 = matched (keeps continuity); 2 = transition (for scene change); 3 = cut-in (insert); 4 = cut-away; 5 = jump; 6 = error of non-continuity of setting; 7 = error of non-continuity of character; 8 = error of non-continuity of screen direction

B. 39. Establishing shot:
1 = pan
2 = pull-back
3 = reverse angle
4 = used as establishing shot
5 = used as re-establishing shot

C. Time-Space Dimensions

40. Construction:
1 = serial action
2 = parallel action
3 = error - technical
4 = error - content

41. Time Distortions:
1 = flashback
2 = flash forward
3 = jump back terminal
4 = jump forward terminal
5 = error technical
6 = error content

42. Tempo alterations:
1 = build up
2 = slow down
3 = abrupt
4 = error - technical
5 = error - content

V. TITLES

43. 1 = written; 2 = voice over; 3 = both

44. Credits given:
1 = title
2 = by
3 = actors
4 = other

45. legible (audible):
1 = yes
2 = no

audible:
1 = yes
2 = no

46. setting:
1 = natural background
2 = animated
3 = both
4 = superimposed
5 = spoken

Levels of Structural Complexity in Children's Narrative

Level 1. Pre-Dyadic

This is essentially a level of fragmentation. Initial dyads (monads) are presented without the second member of the dyad pair, i.e. there is no resolution. For example,

"The girl had no parents. She cried and cried."

L (disequilibrium) --> LMK --> [ ]

Level 2. Simple Dyadic

In this level stories contain one complete dyadic unit; and there are no medial motifemes. The stories are short but structurally symmetrical.

L (disequilibrium) --> LL (equilibrium)

Level 3. Complex Dyadic

This level is characterized by a complete dyadic unit seperated by one or more medial motifemes.

L (disequilibrium) --> LMK --> LL (equilibrium)

Level 4. Successive Simple Dyadic

Stories on this level have the same simple dyadic structure of Level 2; however, the original dyad is repeated one or more times. This allows for expansion of the story length without an appreciable increase in structural complexity. (Multiple episodes)

L --> LL; L --> LL; L --> LL; V --> VO

Level 5. Successive Complex Dyadic

Repetition of the complex dyadic structure of Level 3. At this level there is considerable internal (medial) expansion as well as dyadic repetition.

L --> D --> Recon --> Recon C --> R --> LL; L --> LMK --> LL

Level 6. Staggered Dyadic

Stories on this level oftentimes have the initial monad of a dyad repeated before the disequilibrium created in the initial monad has been resolved in equilibrium.

L_1 --> D --> Recon --> Recon C --> L_2 --> R --> LL_{1-2}

Level 7. Simple Embedded

This level is characterized by the occurrence of a single (secondary) dyadic episode between the initial and terminal monad of the primary

dyad. A single episode is embedded within the primary dyad (i.e., a sub-plot).

L --> D --> Recon --> /V --> VO/--> Recon C --> R --> LL

Level 8. Complex Embedded

This level is characterized by the occurrence of multiple embedded sequences between the initial and terminal monad of the primary dyad. This is basically the same as Level 7. There are, however, many interruptions in the main plot (i.e., there are numerous sub-plots).

L --> D --> Recon --> /L --> LL/--> /V --> VO/--> /V --> VO/--> R --> LL

Index to Functions

I.	Beginning and Ending	1
II.	Disequilibrium	1
III.	Arrivals and Departures	2
IV.	Functions Preceding Danger or Disequilibrium	3
V.	Attack Functions	4
VI.	Defense Functions	5
VII.	Escape Functions	5
VIII.	Release Functions	6
IX.	Chase Functions	6
X.	Capture and Defeat	7
XI.	Discoveries and Announcements	7
XII.	Alliance	8
XIII.	Magical Transformation	8
XIV.	Equilibrium	8
XV.	Rewards	8

Inventory of Functions

Beginning and Ending

1. Introduction
   - 1.1. Introductory marker
     - 1.1.1. once
     - 1.1.2. once upon a time
     - 1.1.3. one day
   - 1.2. Delineation of characters
   - 1.3. Background information
   - 1.4. Prelude
   - 1.5. Initial situation: point where story (plot) begins, the first scene

2. Conclusion
   - 2.1. Epilogue: concluding section after the resolution (equilibrium)
   - 2.2. Statement of moral
     - 2.2.1. relevant
     - 2.2.2. irrelevant
   - 2.3. Terminal marker
     - 2.3.1. the end
     - 2.3.2. they lived happily ever after
     - 2.3.3. that's all

Disequilibrium

3. Lack or State of Insufficiency
   - 3.1. Direct Physical
     - 3.1.1. loss of body part
     - 3.1.2. hunger
     - 3.1.3. thirst
       - 3.1.3.1. water
       - 3.1.3.2. blood
     - 3.1.4. adequate temperature
       - 3.1.4.1. too hot
       - 3.1.4.2. too cold
     - 3.1.5. sickness
     - 3.1.6. wound
   - 3.2. Indirect Physical
     - 3.2.1. loss
       - 3.2.1.1. home
       - 3.2.1.2. family
       - 3.2.1.3. pets
     - 3.2.2. poverty
     - 3.2.3. no place to live
     - 3.2.4. imprisonment
       - 3.2.4.1. locked up
       - 3.2.4.2. tied up
       - 3.2.4.3. spellbound (held by spell)
     - 3.2.5. necessary object
       - 3.2.5.1. weapon
       - 3.2.5.2. equipment
       - 3.2.5.3. vehicle

3.2.6. damage
3.2.7. overabundance
3.2.7.1. too many pets
3.2.7.1. too many guests
3.2.8. state of being lost
3.2.9. destruction
3.3. psychological
3.3.1. wishfulness
3.3.1.1. pets
3.3.1.2. money
3.3.1.3. candy
3.3.1.4. travel
3.3.2. loneliness
3.3.3. sadness or unhappiness

4. Task or Test
4.1. find something
4.2. go someplace
4.3. take something someplace
4.4. get something (bring something back)
4.5. make something
4.6. do something
4.6.1. kill someone
4.6.2. beat someone up
4.6.3. capture someone
4.6.4. guard something
4.6.5. get revenge

Arrivals and Departures

5. Appearance or Arrival
5.1. Protagonist
5.1.1. central character
5.1.2. hero
5.1.3. provider
5.1.4. helpers or allies
5.2. Antagonist
5.2.1. villain
5.2.2. allies

6. Departure
6.1. Protagonist
6.1.1. central character
6.1.2. hero
6.1.2. provider
6.1.3. helpers or allies
6.2. Antagonist
6.2.1. villain
6.2.2. allies

7. Return
7.1. Protagonist
7.1.1. central character
7.1.2. hero
7.1.3. provider
7.1.4. helper or allies

7.2. Antagonist
7.2.1. villain
7.2.2. allies

8. Translocation

Functions Preceding Danger or Disequilibrium

9. Threatening Situation: Presence of Impending Danger
9.1. Presence of dangerous animals
9.1.1. wolf
9.1.2. lion
9.1.3. bear
9.1.4. alligator
9.2. Dreadful creatures
9.2.1. monsters
9.2.2. vampires
9.2.3. ghosts
9.2.4. creatures from outer space
9.3. Enemies or opponents
9.4. Natural forces
9.4.1. fire (burning)
9.4.2. water (drowning)
9.4.3. high places (falling)

10. Warning of Impending Danger
10.2. Physical (indirect)
10.2.1. ringing of alarm
10.2.2. barking of dog
10.2.3. screams
10.1. Physical (direct)
10.1.1. verbal warning
10.1.2. written warning
10.4. Magical
10.4.1. crystal ball
10.4.2. magic mirror
10.3. Intellectual
10.3.1. dream
10.3.2. intuitive sense (feelings)

11. Threat
11.1. Threatening sounds
11.1.1. words
11.1.2. growls
11.1.3. roars
11.1.4. rattle
11.1.5. hiss
11.2. Threatening posture or gestures
11.2.1. clenched fist
11.2.2. bared fangs
11.2.3. coiled snake
11.2.4. mean look
11.3. Threatening advances
11.3.1. step towards
11.3.2. charge

12. Interdiction
12.1. Command: don't do X, do X before Y, do X
12.1.1. don't speed
12.1.2. don't talk to strangers
12.2. Advice
12.3. Request
12.4. Implicit interdiction
12.4.1. don't go up the hill
12.4.2. don't play with fire
12.4.3. don't undress (go nude) in public

13. Violation
    13.1. Direct or conscious
    13.2. Inadvertent

Attack Functions

14. Attack: Personal
    14.1. Direct physical
        14.1.1. hit
            14.1.1.1. punch
            14.1.1.2. slap
            14.1.1.3. spank
            14.1.1.4. club
            14.1.1.5. whip
            14.1.1.6. kick
        14.1.2. sting
        14.1.3. stab
            14.1.3.1. knife
            14.1.3.2. sword
        14.1.4. cut
            14.1.4.1. knife
            14.1.4.2. sword
        14.1.5. scratch or claw
            14.1.5.1. fingernails
            14.1.5.2. claws
        14.1.6. bite
        14.1.7. jump on
        14.1.8. step on
        14.1.9. knock down
        14.1.10. push or shove
        14.1.11. trip
        14.1.12. grab
        14.1.13. choke or strangle
        14.1.14. eat or devour
        14.1.15. wound or injure
            14.1.15.1. bloody nose
            14.1.15.2. broken arm
        14.1.16. murder
            14.1.16.1. decapitate
            14.1.16.2. devour
            14.1.16.3. shoot
    14.2. Indirect physical
        14.2.1. shoot
            14.2.1.1. bullets
            14.2.1.2. arrows
            14.2.1.3. fingernails
            14.2.1.4. spear (speargun)
        14.2.2. throw
            14.2.2.1. rocks
            14.2.2.2. snowballs
        14.2.3. blow up, bomb
        14.2.4. burn or start fire
        14.2.5. poison
    14.3. Intellectual
        14.3.1. scare or frighten
            14.3.1.1. scary sounds
            14.3.1.2. scary sights

31. Preparation for Attack
    31.1. Physical
        31.1.1. acquisition of weapons
    31.2. Intellectual
        31.2.1. plan
    31.3. Social
        31.3.1. conspire

32. Struggle
    32.1. battle or fight
    32.2. game or contest

14.4. Magical
14.4.1. caste spell
14.5. Social
14.5.1. ridicule or mock
14.5.1.1. laugh at
14.5.1.2. call names
14.5.2. embarrass or humiliate
14.5.2.1. force to disrobe in public

15. Attack: Impersonal
15.1. theft
15.2. abduction
15.3. damage property
15.4. destroy property

Defense Functions

16. Defend
16.1. Physical
16.1.1. block
16.1.2. duck
16.1.3. dodge
16.2. Intellectual
16.2.1. ignore
16.2.2. offer rebuttal

17. Prepare for Defense
17.1. Physical
17.1.1. fortify
17.1.1.1. put up fences
17.1.1.2. put up barriers
17.1.1.3. put on armor
17.1.2. guard
17.2. Intellectual
17.2.1. plan or formulate strategies
17.3. Social
17.3.1. organize forces (soldiers, team)

Escape Functions

18. Escape from Impending Danger
18.1. Avoidance
18.2. Compliance (with an interdiction)

19. Escape from a Threatening Situation
19.1. Direct Physical
19.1.1. walk
19.1.2. run
19.1.3. swim
19.1.4. jump
19.1.5. hide
19.2. Indirect Physical
19.2.1. drive
19.2.2. sail
19.2.3. fly
19.3. Magical

20. Escape from an Attack
20.1. Direct Physical
20.1.1. walk

20.1.2. run
20.1.3. swim
20.1.4. roll away
20.1.5. hide
20.2. Indirect Physical
20.2.1. drive
20.2.2. sail
20.2.3. fly
20.3. Intellectual
20.3.1. outwit opponent
20.4. Magical

21. Escape from Captivity
21.1. Direct Physical
21.1.1. break out
21.1.2. dig out
21.1.3. jump out
21.1.4. hop out
21.2. Indirect Physical
21.2.1. defective lock
21.2.2. defective door
21.2.3. defective walls
21.2.4. defective rope
21.3. Intellectual
21.3.1. solve riddle
21.3.2. find secret passageway
21.4. Magical
21.4.1. hypnotize guards
21.4.2. make bars disappear
21.5. Social
21.5.1. convince captors to release
21.5.2. organize prisoners for escape

Release Functions

22. Rescue
22.1. Direct Physical
22.1.1. extinguish fire
22.1.2. free from the stomach of an animal
22.2. Indirect Physical
22.2.1. provide means of escape
22.2.1.1. car
22.2.1.2. life preserver
22.3. Magical
22.3.1. break spell

23. Discharge from Captivity or Imprisonment

Chase Functions

24. Chase
24.1. Direct Physical
24.1.1. walk
24.1.2. run
24.1.3. swim
24.2. Indirect Physical
24.2.1. drive
24.2.2. sail
24.2.3. fly
24.3. Magical

25. Stalk
25.1. hunt or search for
25.2. sneak up on

26. Deception
26.1. Direct Physical
26.1.1. play dead
26.1.2. act defeated
26.2. Indirect Physical
26.2.1. disguise
26.3. Intellectual
26.3.1. lie or give false information
26.4. Magical
26.4.1. create illusions

27. Reconnaissance (seeking information)
    27.1. questioning
    27.2. observing
    27.3. searching for

28. Acquisition of information

Capture and Defeat

29. Capture
    29.1. Direct Physical
        29.1.1. trap
        29.1.2. net
        29.1.3. grab
        29.1.4. swallowed whole
        29.1.5. overpowered
    29.2. Indirect Physical
        29.2.1. arrest
    29.3. Intellectual
        29.3.1. outwit
    29.4. Magical
        29.4.1. hypnotize
        29.4.2. caste spell

30. Defeat

33. Self-Defeat
    33.1. Direct Physical
        33.1.1. fall asleep
        33.1.2. clumsiness
    33.2. Indirect Physical
        33.2.1. paralysis (freeze)
    33.3. Intellectual
        33.3.1. foolishness
        33.3.2. stupidity
        33.3.3. confusion

Discoveries and Announcements

34. Lack Made Known
    34.1. announcement
        34.1.1. tell mother
        34.1.2. hero learns of lack in dream
    34.2. plea for help
        34.2.1. crying
        34.2.2. request
    34.3. discovery
    34.4. recognition

35. Attack Made Known
    35.1. announcement
    35.2. plea for help
    35.3. discovery
    35.4. recognition

36. Violation Made Known

37. Escape Made Known

38. Rescue Made Known

39. Fortuitous Discovery or Unexpected Gift
    39.1. find treasure
    39.2. receive a gift

Alliance Functions

40. Prepare for Counter Action
    - 40.1. decision to help or acceptance of quest
    - 40.2. formulation of plan or strategy
    - 40.3. pledge to help
    - 40.4. offer of assistance

41. Refusal of Assistance

42. Formation of Alliance or Enlistment of Additional Helpers

43. Marriage

Magical Transformation

44. Magical Transformation
    - 44.1. animate to animate
        - 44.1.1. human to human
        - 44.1.2. human to animal
        - 44.1.3. animal to human
    - 44.2. animate to inanimate
        - 44.2.1. human to object
        - 44.2.2. animal to object
    - 44.3. inanimate to animate
        - 44.3.1. object to human
        - 44.3.2. object to animal
    - 44.4. inanimate to inanimate
        - 44.4.1. object to object
        - 44.4.2. environment to environment
            - 44.4.2.1. house to jungle
            - 44.4.2.2. store to jungle

Equilibrium

45. Lack Liquidated
    - 45.1. original lack liquidated
    - 45.2. substitute for lack

46. Task Accomplished

47. Threat Withdrawn: situation turns out not to be dangerous
    - 47.1. Dangerous animal withdraws
    - 47.2. Dreadful creature withdraws
    - 47.3. Enemies or opponents withdraw
    - 47.4. Natural forces subside

48. Victory

49. Villainy Overcome or Nullified

Rewards

50. Formal Reward
    - 50.1. money or riches
    - 50.2. prizes
    - 50.3. medal or trophy
    - 50.4. marriage
    - 50.5. other forms of status

Appendix 7

DAN MAHONY

Experiment I - Inventory of Spatial Concepts

Part I Stationary Views

S views T.V. screen on which three 'mountains' are presented. Subject is asked:

a) Which is closest to him
b) which is the middle size one (early seriation)
c) To determine from a new view whether the camera is farther or closer
d) """""""""""
e) To determine where the light is coming from when its source cannot be seen
f) To determine which mountain is closest to that light source
g) To define the 'front' and 'back' of the T.V. screen

Part II - Moving Camera

Subject views T.V. screen on which 3 mountains are presented. Subject is asked:

a) To determine which way the camera is moving in each of four directions (left, right, up down)
b) The names of those directions (left/right coordination)
c) To determine what shove is made by the camera as it describes a square with its movements.
d) To derermine whether the camera is panning or actually moving around (truck) one of the mountains
e) To re-enact the camera's movement using a toy camera and a model (life sized) of the objects on the screen.

Part III
Stationary Camera Position

Subject views the T.V. Screen on which a cube is presented and is asked to:
a) Determine whether the camera is above the cube (crane) or on the ground looking up (pan)
b) Re-enact using appropriate material
c) To determine which of 3 views of the cube is from the medium distance away (Seriation of Distance)
d) Re-enact using appropriate materials

Part IV Conservation of Depth

Subject views the T.V. screen on which a lamb travels away from the viewer (depth) from one mountain, past another farther back to another still farther back. Then:
a) Subject is told that the first mountain was put between the second and third and asked if the third is now any farther away from the second.

Experiment II - Three Dimension Coordination of Viewpoints

Subject is presented with a clear plastic dome (hemisphere) that is place on two small model "mountains." Subject then is presented with various views of the two "mountains" on the T.V. screen and asked to place his finger on the dome or a point that corresponds to the camera's position. Forty views are presented, eight from a horizontal position, sixteen from an elevation of 30°, eight from an elevation of 60° and eight from overhead. Subject is also asked whether he is right handed, left handed or possesses some degree of ambidexterity. Experimenter records all of the subject's 'points.'

Experiment III - Editing and Film Sequence Concepts

Part I - Simple Deletion

Section 1

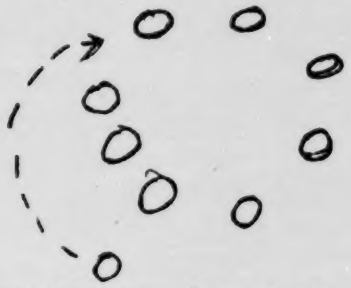
S is presented with a small toy horse and a toy barn. E manipulates the materials by moving the horse from a starting point on the left toward the barn on the right. S is then presented with a 'movie" on the T.V. screen of what he has just seen. The movie is divided into 4 parts by numbers on the lower left hand side of the screen. The first part consists of the horse at its starting point. The second shows the horse moving 1/2 of the way toward the barn. The third shows a zoom 'in and out' of the horse in a stationary position. The fourth shows the horse completing the journey. S is asked to:

a) Tell E what he has just seen on the screen
b) Whether it was the same as E had shown with the materials
c) Delete one of the sections and tell why he chose it
d) Tell why he left in each of the remaining sections

Experiment III - Part I

Section 2 - Deletion (Speed)

S is presented with 9 discs arranged thusly:

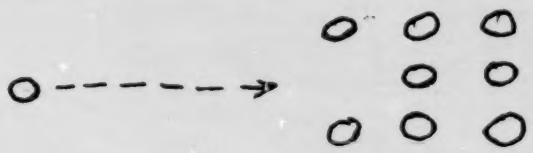


E moves the disc to join the other 8 as above. S is presented with a 4 part film of the disc's journey. The first part shows the disc travel 1/3 of the way. The second shows the second 1/3 of the trip, but the disc travels this distance at twice the speed of the first 1/3. The third part shows the second 1/3 of the journey again but with the disc moving at the same speed as in Part I. Part IV shows the disc completing the journey at the same speed as Parts I and III. S is asked to:

a) Tell what he has just seen
b) Whether or not it was the same as E had shown with the materials and if it differed, how it differed.
c) To delete one of the sections and tell why he chose that one
d) Tell why he left in each of the remaining sections

Part II - Simple Rearrangement
(Logical Sequence)

Subject is presented with nine plastic discs arranged thusly:



E moves the disc on the left toward the right until it fills in the space. S then views a 3 part film on the T.V. screen of the disc's trip but with the second and third 1/3 of the journey reversed. S is then asked to:

a) Tell what he has just seen
b) Tell whether or not it was the same as E had shown with the materials
c) Rearrange the 3 sections of the film so that it accurately depicts the disc's journey as shown by E with the materials
d) Asked to justify the order he decided upon, section by section

Experiment III - Part III
Section 1

S is presented with a 4 part movie on the T.V. screen of a lamb travelling from left to right along a road. There are houses and tress along the way and a checkered "mountain" at the end of the road on the right. The first part of the film shows the lamb traveling 1/4 of the journey. The second shows the lamb traveling the second 1/4 of the journey. The third part shows the checkered mountain at the end of the road. The lamb is not seen in this part. (Cutaway) The last part shows the lamb completing the journey. Each part is designated by a number on the lower left hand part of the screen. S is asked to:

a) Delete one of the parts and tell why he chose the one he did
b) Tell why he chose to leave in each of the remaining parts

Section 2

S is presented with the film again. E stops the film after each part and S is asked:

a) What happens in each part
b) Why it is in the film

The point of this section is to elicit S's understanding of the cutaway (Part 3).

Section 3 - Scenery Set-up

S is presented with all the mountains that were in the film plys some that weren't (an additional checkered mountain and 3 houses) and asked to set up the materials just like they were in the film. E records the set up.

Section 4 - Cutaway

S is presented with the film once more. E stops the film during the cutaway part (3) and S is asked to:

a) Tell what he sees
b) Point to in the scenery what is being viewed on the T.V. screen
c) Tell what the lamb is doing when it is not seen
d) Predict the lamb's location at the beginning of the next part

Part IV - Simple Replacement
Section 1

E sets up scenery which consists of a lamb traveling along a road, past houses and tress toward a fenced in yard of lambs. E moves the lamb along the road from left to right and explains that S will see a 4 part movie of the trip. Further, E explains that S will see a fifth part (insertion) first that must replace one of the 4 parts of the movie. S will have to decide on which part to delete and replace with the insertion. S is asked to:

a) Decide on which part to delete and tell why he chose the one he did
b) Tell why he chose not to delete each of the other parts

Section 2

S is presented with the film again and asked to find which section has "something wrong" with it. (Section 3 has a tree missing that is seen in Parts 1, 2, and 4). S is asked to:

a)Tell what's wrong with the part he chose

Part V - Story and Rearrangement
(Story Sequence)

S is told that a person made a movie of a story. The story is "A monster came out from behind the mountain and ate up the little lamb." The film presents the story in 4 parts with the parts out of sequence (2, 4, 1, 3) and one of the parts shows the lamb escaping. S is asked to:

a)Tell all he can about the movie (E elicits nothing specific)
b)Tell if he would change the movie and how he would

Part V - Story
Section II

E then elicits the internal social relationships of all the characters in each story.

Perception and Interpretation
Part I (Maranda 2)

Animated sequence shows two dots 'chasing' each other from left to right toward a vertical line on the right of the T.V. screen. The dot on the left 'overtakes' the dot on the right. S is asked to:

a) Tell what he saw
b) What he thinks made each dot move
c) Whether the dots moved on their own power or not
d) Whether they moved separately (one at a time) or together
e) Tell if the line moved at all
f) Tell why the line was there and how he thinks it got there
g) Tell whether he was surprised at any time during the film
h) Establish the social complexity of the dots and lines, e.g. who knows who, who are enemies or friends, etc.
i) Asked when the film ended and to pretend that it didn't end and make up an ending
j) To tell what game the movements of the dots resembled and how they do
k) To reenact with materials what he saw on the screen. E carefully records reenactment using comic panel technique

Part 2 - Maranda 3

Sequence shows two dots chasing as before but with an additional line intervening and preventing the dot on left from "catching," the dot on the right. The right dot continues on until it stops on the other side of the line at right. S is asked all of the above questions.

Part 3 - Maranda 4

Sequence shows 2 dots chasing as before but with the dot on the right "turning around" and chasing the left dot and overtaking it. S is asked all the above questions.

Part IV - Maranda 1

Sequence shows the dot on the left singly overtaking the dot on the right which doesn't move at all. S is asked all the above questions.

Part V - Story
Section I

S views all 4 parts again and is asked to rank them in order of preference and to explain each ranking. S is then asked to:

a) Write a story about all the things in the part he liked best
b) Write a story about all the things in the part he liked least
C) Choose from two possible beginnings of a story about the dots. The choice is lack vs. villainy

Appendix 8
DAN MANONY

The Videotesting Program

Interim Report 6/1/75

Part I

The video testing program consists of 17 separate experiments on 16 subjects, ages 8-9 and some pilot testing of pre-school subjects. A complete description of each experiment is found in Part II of this report. The experiments are grouped in the following categories:

1. An inventory of spatial concepts and co-ordinations (left-right, etc.)
2. A co-ordination of elevated viewpoints experiment to measure these logical structures considered necessary for social development.
3. An examination of the child's understanding of film editing and film sequence.
4. An examination of the child's perception of what takes place on the screen.
5. An examination of the child's interpretation of what takes place on the screen.
6. An examination of the child's understanding of parallel action.

Further, the experiments are all intended to examine the creative processes of the subjects especially as these processes relate to story telling and social play. A thorough investigation of mental imagery also proceeds from the experiments. The following is intended to be a rough sketch of some of what this experimenter has seen and is neither presented as fact nor considered to be more than a small part of the total data bank. The amount of data yielded is immense due to the capabilities of T.V. as an experimental and test medium.

7. Younger children (below 6 yrs.) are unable to determine the direction of camera movement from what they see. Older subjects, 8-9 years, are all able to do so. This suggests that the appearance of the ability is developmental and parallels various conservation tasks if it is not itself one.
8. All subjects (8-9 yrs.) can determine which of 3 mountains is the middle sized one.
9. All subjects, (8-9 yrs.) correctly distinguished a 'long shot' from a close up but younger subjects failed to do so correctly.

10. All of (8-9 yrs.) sampled could correctly determine the location of an off screen light source but most younger subjects could not.

11. The "front" and "back" of the T.V. screen are matters of definition to some subjects and vary considerably.

12. Some older and all younger subjects had difficulty in contrasting "pan" with "truck." Some of them changed their response from "truck" to "pan" after they saw the "truck."

13. Some older and most younger subjects had difficulty in determining whether a given view of a cube was from above (crane) or on the ground looking up (pan-up).

14. All older subjects could determine the "middle sized distance" when presented with three views of a cube varying distances.

15. One older and all younger subjects did not conserve depth. This is in keeping with Piaget's findings on conservation of distance. There is no apparent difference (at this time) between the concept of distance and the concept of depth insofar as it relates to film and video.

16. The coordination of elevated viewpoints test shows so far that elevated views present greater problems than horizontal view. The horizontal views presented the same degree of difficulty as the standard version of the Coordination of Perspectives. (Each subject was given the Laurendeau and Pinard also.) But there was a drop in the number of correct responses when the same views were presented from elevations.

17. The over-head views presented the most difficulty for the subjects but not for the few adults tested who found them easier to solve than the 30° or 60° views.

18. The amount of elevation (30° or 60°) was sometimes incorrectly perceived by some subjects.

19. There may be a difference in the coordination of viewpoints of left handed and right handed subjects.

20. Most subjects (8-9 yrs.) chose to delete those sections of a film that had the least amount of action. The amount of action seems more important than logical sequence. Development may proceed from concern with amount of action to concern with logical sequence.

21. Most subjects chose not to maintain the speed of a dot toward its goal. They chose to keep in the section where the dot speeded up and chose to delete the section where it moved at the same speed as in the other sections. (See experiment III, Part I, Section 2.)

22. Some subjects did not perceive the change in speed of the dot.

23. Most older subjects correctly solved the scrambled sequence of a dot's travels, but not all.

24. Some did not see the film as having a scrambled sequence even though they were shown ahead of time (with materials) the correct sequence.

25. Some (4) older subjects and most younger subjects did not correctly understand the cutaway. Some thought that it actually altered the spatial arrangement of what was being filmed. (Part 3 of a 4 part movie of a lamb's travels toward a checkered mountain showed the mountain only and not the lamb. In re-enacting the movie with materials, some subjects placed the mountain in the lamb's path at a place corresponding to where the lamb was last seen before the cutaway to the mountain.)

26. This led to further cutaway tests that have revealed that younger subjects think that the action has halted when the camera shows something other than the action, even though the continuity of the film is clearly maintained.

27. Understanding parallel action is evidently a developmental milestone. This is further evidenced in their stories ("meanwhile," etc.) and games (Kick the tin, etc.) which requires 'it' to keep the activities of both those he is chasing and those he has captured in mind.)

28. The ability to correctly predict where the dot would be when the camera returned to it may be a developmental process through closer and closer approximations.

29. Few subjects correctly set up the scenery they had just seen on the screen. Some added objects others forgot to include some.

30. The same misunderstanding of cutaway evidenced itself when the subjects were asked to insert a section of film (showing the end of the trip) somewhere in the sequence. Some thought that putting the section of film in the middle of the movie would actually place the content of that section in the lamb's way.

31. Many subjects did not realize that a movie presented a story out of sequence, even though they were told in advance a) that it would be about a story, and b) the story itself was carefully told.

32. What they saw was far more important. Thus, they interpreted the story in terms of what they actually saw on the screen and most 're-wrote' the story to fit.

33. When presented with a sequence of 2 dots 'chasing' each other from left to right toward a vertical line, most (60%) saw it as a chase and 40% did not.

34. When asked to re-enact what they saw (using materials) most moved the dots 3 or 4 times to explain the events. There were 20 or 30 actual moves on the screen.

35. Some re-enacted what they saw in a very different way than actually appeared on the screen. One subject re-enacted the movement of the dots vertically, another in the opposite direction.

36. Some moved the dots toward each other, something that did not occur on the screen.

37. When asked to explain what made the dots move, about half attributed physical causes ("the wind, cosmic forces, magnetic power") and half psychological causes ("he wanted to catch him").

38. When asked whether the dots moved on their own power or not, most replies were based upon their original interpretations -- "well, if he was chasing him, he must have moved on his own power."

39. Subjects never or rarely mixed psychological and physical causal explanations (e.g., he shot him with a phaser gun). Either the causality was totally physical or totally psychological.

40. External/internal locus of control was examined from many different points of questioning. There will be much cross checking possible with the clinical and I.Q. tests administered to the same subjects.

41. Sometimes a subject attributed movement to an object that did not move.

42. When asked to decide whether a given dot or line was good or bad, most subjects gave justifications that were based upon their original perceptions and interpretations of what they saw, e.g., "well, he was bad because he was chasing him."

43. All subjects who saw the dots as persons used "he" and not one subject said "she". This may merely be a matter of linguistic convention.

44. The 4 sequences schematically represented possible types of story plots based upon the Maranda levels. Approximately 2/3 of the subjects interpretations of what they saw correlated with the actual plot representd.

45. About 1/3 of the subjects utilized the represented plot when asked to write a story about the action.

46. When asked about the social relationships of the dots, (e.g., "did the dark dot know the light dot?"), most subject's responses were based upon their original interpretation of what they saw. If it was seen as a chase, then the dots knew each other. If it was not a chase, then the social relationships of the dots depended upon whatever context originally defined by the subject.

47. All thought the film was over because the screen went blank. None said it was over for any other reason, (e.g., "that's the end of the story.").

48. When asked to make up an ending other than what they saw, most chose to have the dots and lines simply disappear.

49. When asked to tell what game the action represented, some (1/2) subjects used the 'plot' to decide on the game. Many did not however, and some saw the dots not a players but as objects being manipulated by unseen players. (Bulls and walls, etc.)

50. When presented with a mediated escape sequence, most, 2/3, saw it as such.

51. This sequence was the most preferred.

52. But when asked why it was preferred, most gave reasons based upon the amount of action and not on the plot depicted.

53. In one sequence, one of the dots never moves, but only one subject in 16 remembered this was the case. All others moved the dot in the re-enactment.

54. When asked to choose from 2 possible beginnings of a story about the dots, most girls chose ("The light dot was lost and couldn't find its way home.") and most boys chose "The light dot was hurt by the mean dark dot."

55. The stories that the subjects wrote were at a lower level (if you will) than their stories are in general. This suggests that imposing limitations such as characters and plots causes a decrease in:
    a) Word Length
    b) Social Complexity
    c) Plot Complexity
    d) Descriptive phrases

56. Nearly all of the video tests were found to be "boring" by most subjects. When asked why, they said that "nothing happens." I suspect that children naturally expect T.V. to be interesting and entertaining.

57. However, all subjects became engrossed in the interpretive parts of the video testing program.

Dan Mahony

Appendix 9
FRANK

Statistical Analysis

I. Analysis of Testing, Filmic, and Experiential Data

Objectives: To statistically determine what relationships exist in this data.

Job Analysis:

1) Compiling, coding and keypunching data from the following areas:
   a) psychological tests
   b) experiential data from teacher, observer, and tape logs - including amount of time spent in each area of film-making
   c) number and types of films worked on
   d) data from Joy's technical assessment of films
   e) hopefully, data from a qualitative assessment of films made by Y.F. experts other than the teachers
   f) demographic data on the subjects and their families

Estimate of time required -- 80 - 100 hours

2) Tabulation of the above data -- giving us a clear picture of the data available to us and of the ranges over which the various variables spread. This is necessary in order to know which cases and which variables are useable in further analysis and whether specific techniques will be appropriate.

Time Estimate -- 10 hours

3) Correlational analysis. We will simply correlate everything with everything else. We can then see whether a) our samples look like others in terms of their patterns of intercorrelations (e.g., do the WISC subtests correlate as expected) and b) our hypotheses concerning the effects of filmmaking experience on test scores have any validity and c) further analysis will be of value.

Time Estimate -- 15 hours

(Of the four types of analyses which follow, we will probably only use two or three.)

4) Factor Analysis. Out of all our many variables this procedure compiles a limited number of higher order factors whose descriptions may be very interesting. This is especially true since we will be factoring data with known relationships (tests) together with data about which nothing is known.

Time Estimate -- 15 hours

5) Regression analysis. This technique should be of value in answering a number of questions:
   a) Do any of the variables associated with film making predict change in performance IQ or changes in picture arrangement (PA) scores and, if so, which variables.

5) (Continued)
   b) Do our variables account for a significant portion of of the variance present in IQ & PA change.
   c) Do any or all of the pretest or personality scores or demographic variables predict success and/or continuation in film-making.

Time Estimate -- 20 - 40 hours

6) Analysis of covariance. We can take the variables of greatest theoretical and/or empirical interest and do tests of significance in which we parcel out the effects of the differing exposures of different kids to film-making. This technique allows us to look at non-linear relationships (assumed in regression and factor analysis) and at the interaction effects of various variables.

Time Estimate -- 20 - 40 hours

7) Profile analysis. van den Daele suggests this technique which has apparently been recently developed by Guttman. It is apparently appropriate for use where large amounts of data are available on a few subjects and discriminates between subgroups which show distinctive data patterns or profiles.

Time Estimate -- 20 - 30 hours

8) Report writing. Writing up results, preparing tables, etc.

Time Estimate -- 10 - 20 hours

Total Time -- 160 - 250 hours

Resources: R.F. Eadie - 60 hours
Peter Hunt - 20 - 40 hours (?)
Peter Lazzaro - 40 - 60 hours (?)

A DEVELOPMENTAL PSYCHOLOGY OF CHILDREN'S FILM-MAKING

Annual report #2

Introduction

This report covers the second year of research activity on film-making during childhood. The first two years constituted the investigatory phases of this project. The third year will be devoted almost entirely to analysis. The research has been carried out as a collaborative activity between the Young Filmakers of 4 Rivington Street, New York, and the Program in Developmental Psychology at Teachers College, Columbia University. The research activity is funded by the Ford Foundation. The teaching activity at the Young Filmakers workshops has been funded by other foundations and H.E.W.

The present report is divided into the following sections:

1. Origins and special focus of this study.
2. The Creative Process in Film-Making.
3. The Developmental Stages in Childhood Film-Making.
4. The Psychological Effects of Film-Making Activity.
5. Film and Aesthetics in Childhood.

It is expected that this segmentation of the enterprise will continue through into the final report and into subsequent publications.

Origins and Special Focus of this Study

Beginning in October of 1974, the Young Filmakers Foundation established a film-maker's workshop at Ludlow Street. Children attended the workshop from some school classes, but the most constant source of child film-makers occurred in the after school voluntary program. The type of teaching which was given is described in general outline in The Young Filmakers and The Young Animators (Larsen, Hofer, Barrios, etc.). The funding of the teaching program meant that the teachers were constantly seeking better and more effective methods of conveying film-making procedures to the child volunteers.

The aims of the research were to establish (a) the processes through which children of the same or different ages proceeded in the acquisition of film-making mastery, and (b) the perceptual cognitive and affective changes in the children which resulted from this type of learning experience.

During the first year research was conducted at the workshop and at a New York elementary school (P.S. 3). A decision had to be made rather early about the type of research that would be possible at Ludlow given the character of the teaching (not under the researcher's control) and the nature of the situation (overcrowded and with little space left for non-participatory research procedures). It was decided that at least in the beginning the wisest approaches would be observational and documentary. In the second year, however, it was possible to use the codings developed in the first year (from video types, observation and disucssions with the teachers) in a more systematically quantitative manner. In addition our earlier findings with respect to before and after measures of a psychometric sort, were now extended with some of the first year population and replicated with an entirely new population in the second year. In addition the first year's observational procedures not only led to more adequate coding behavior in the naturalistic setting, it permitted the commencement of more experimentally controlled procedures in the P.S. 3 setting. Unfortunately recurrent thefts at the Ludlow setting forced a shift to Henry Street, which although a slightly better setting for research activity, in turn led to a different kind of subject population than had been present at Ludlow. Henry Street was more available to more children and there was as a result, more "casual" relationships developed with the workshop than had been typical at Ludlow, where more children persisted with film-making for very long periods of intensive activity.

In the first report we focused on the major types of research activity, observational, psychometric and experimental. We feel it is now time to begin to adumbrate the substantive contributions that we will be able to make to this general area and these are those outlined in the contents above. While most of the data is yet to be analyzed, we will report here the state of the work done, to be done, and wherever possible, give some indications of the early results.

2. The Creative Process in Film-Making

As we have noted in the earlier report we have segmented the process into a number of steps and have sought information about each of these. They include the following:

(a) generation of the original idea
(b) the preparation of the script
(c) the development of the shot list
(d) the making of the movie

(e) the completed film
(f) the editing of the movie
(g) the addition of sound
(h) the final film

The types of data upon which our description of this process is based as follows. First, there is the quantitative observational coding which records the frequency and intensity of involvement in all these major aspects of film-making and in many subcategories within them. At a minimum this scoring done throughout the year 1975-76 at both Ludlow and Henry gives us descriptive data for this population on all aspects of their film-making and their relationships to their teachers. The majority of the observations were carried out every day after school by Frank Eadie and Peter Lazarro with assistance from George Muggi and Nancy Owen. We estimate that these codings were completed on approximately 80% of the time the children were active throughout the year. In Appendix I we include a statement by Frank Eadie on the origins and usefulness of this particular coding system (See Appendix 1). In Appendix 2, Eadie has expressed his thoughts on how the material from this system can be integrated into a theory of hierarchical organization which will enable us to talk of the creative process in film-making in a systematic manner. (See Appendix 2)

In the first year report we included papers by Eadie on Editing and Idea Generation. For the sake of continuity they are reincluded in this report as Appendix 3 and Appendix 4.

In the present report we add new papers by Eadie on The Development of Shot Lists, Story Boards and Scripts, (Appendix 5). In addition there is a paper by Gilbert Botvin on Categories of Sound Used in Films, (Appendix 6). It should be stressed that all of these papers are in the nature of preliminary formulations only. It will be noted that we have not yet produced such papers in the sections (d) the making of the movie, (e) the completed film and (h) the final film.

Further possibilities for the analysis of the creative act in film-making, however, are indicated in two papers by Dr. Walsh. In the first he further analyses (begun in the first report) the group-produced film "The Detective" as a group creative act, (Appendix 7), and in the second paper he demonstrates the application of a Piagetian logical mathematical model to the analysis of children's film-making (Appendix 8).

The second major source of data for our analysis of the creative act is to be found in the extensive video taped material that we collected in the first year. Out of 10 case studies, we have now reassembled five into temporal continuity for further analysis. This extremely time consuming and tedious work has been done by Peter Lazarro. There is probably insufficient funds for the rest of the editing.

A third major source of data are the interviews conducted before and after the film experience. These promise to yield much information on the children's perception of the film-making. It is already clear from these that from the pre- to post-interview there is considerable verbal change in the children's ability to formulate the steps in the film-making process. About 80% of this data has been transcribed. The rest will be done this Fall. Appendix 9 contains the initial interview, Appendix 10 the post interview. In addition to coded observations, video tape and interviews, another general source of data is the informal questions and observations which proceed during the film-making itself. In Appendix 11, Ken Frey and William Walsh outline a methodology for the collection of this kind of data.

3. The Developmental Stages in Children's Film-Making

We have had several sources of data here. The one used most extensively has been the films made by children either prior to the initiation of this project at Young Filmakers, or by children who are a part of the project. We sought to classify these films as those by young children, by older children, by boys and by girls. Although there are many dozens of "older" (pre-project) films available, in most cases they could not be classified safely even on the basis of this simple information. We had, therefore, to work mainly with films developed during our own project (approximately 150 films). To this end we sought over the two year to develop an adequate code for the technical aspects of fiom-making, that could be coded by viewing the films alone. This has been much more difficult than we had at first envisaged. But a first quantitation of the technical aspects of over 30 live films has been completed by Sarah Pasternak and Frank Bacara. The categories of camera angles, distances, techniques, lighting and editing that they used are listed in Appendix 12. Surprisingly in this age range (9 through 14 years) a first overview suggests that there are very few differences demonstrated either between early and late films or between young a nd older age levels. As these results contrast markedly with those from the third developmental study below, we are inclined to speculate that either (a) this age range is already too old for the major changes registered in the other project or that (b) much of the film-making technique shown is due to the consistent coaching of the teachers at all age levels, thus minimizing the differences due to the children's own perception of these processes. Still the quantitative data is a valuable frequency count for the typical practices to be found at Ludlow-Henry Street.

A second procedure that promises to reveal differences of a learning or developmental sort is that insertion of a film-making task pre- and post training at the workshop. In this procedure the child makes a first film (with minimal instruction) prior to his workshop experience, then makes another at the completion of his time on the project. The details of this procedure are outlined in Appendix 13.

To date, however, the most successful procedure to analyse developmental differences in film-making has been carried out by Dan Mahony and Sarah Zarem. In this study 28 children, four at each age level, two boys and two girls, from ages five to eleven years were introduced to an animation training procedure by a filmed set of instructions and teacher implementations. The details are explained in Appendix 14, (A) and (B). The children's film-making efforts were videotaped and both video tapes and their films have now been edited to produce a demonstration film of the age differences that became apparent. (This video tape will be shown at the time of this report).

A few of the more striking differences between the younger and older children, despite common and repeated instructions in the techniques involved were as follows:

The younger children either did not make or tended not to make:

1. establishing shots
2. parallel movements
3. films about a major character
4. films about a group of characters
5. co-ordinations amongst film objects
6. consistent filmic space
7. reversibility in filmic space

8. multiple scenes
9. graduated entries and exits
10. markers in films (titles, ends, etc.)
11. story themes
12. story transitions
13. causal linkages
14. affective representations
15. use of long shots, close ups, pans, zooms or changes in camera position
16. long films (18 seconds versus 65 seconds for older children films)

This study, which is just in the preliminary stage of analysis, raised important questions about whether these age differences (broken at 8 years) are irrevocable and due to cognitive structure in the children, or are something that could be overcome with overlearning. At least we can say these are the sorts of differences that first occur when film instruction begins. Such differences of a natural sort are usually obscured when the teacher intrudes and actually assists in the construction of the film as is more usually the case. We intend to continue the present study to a later age level, and have hopes of replicating it with a changed set of instructions.

In our prior report we spent considerable time in outlining the narrative elements in films. These are being scored for the above sample of films and it is already clear that the use of narrative is much more primitive in this more complex medium than it is in the stories that children tell at the same age level. This is not unusual. It is typical in development for an earlier, more well adapted, way of functioning to be used in the first confrontations with a new and difficult task. Old means are used for new ends. The interweaving of various levels of expressive competence, however, is seldom precisely stated, and in the present context we hope to be able to arrive at a more adequate statement of the relationship between oral and filmic narrative.

4. The Psychological Effects of Film-Making Activity

In all, approximately 120 children have been given some form of film-making experience and some psychological testing in the two year life of this project to date. Different samples, however, have been used for different studies. Although many tests have been given to the P.S. 3 subjects for example, these tests were not in general given as a part of the before and after experiments in which attempts were made to see if the film-making experience had some impact on psychological capacities. The focus on the psychological effects of film-making has been confined to the workshop subjects at Ludlow and Henry Street. Given that children there are volunteers and are of diverse backgrounds, the major control techniques have been to compare the scores of children who enter and stay in the project with the scores of those who enter but soon leave. The latter children are tested also at the stage in time when those who stayed in the project are finishing their training experiences. Needless to say, this type of "natural" design, while it has much to recommend it from a control point of view, is very difficult to execute because many of the children who quit are not easy to locate six months or a year later. Testing subjects has often involved prior a detective-like operation of locating them.

Still despite all these difficulties, which mean that the number of subjects on whom our generalizations are based, is quite small, we believe we will be able to support the following propositions. (1) Those volunteers who came to film-making and stayed in it were different from those who dropped out. Even though of similar IQ and ethnic background (our most adequate numbers apply to Puerto Rican children), these children begin by being superior on the WISC task of picture completion and object assembly. This implies to us that they were of higher concentration and cognitive application than the drop outs. The picture completion involves the careful analysis of visual forms, and the object assembly requires task persistence. However, our graduates were lower (any differences introduced here are statistically significant) than the drop outs in their scores on creative thinking. That is, although they could focus in on a task, they were not as good at freely associating to a novel stimulus in a labile manner. We suspect that they were better organized but of narrower focus than the drop outs. The latter might well have found the narrow and disciplined concentration of the tasks in film-making too difficult and too restrictive of their broader but perhaps shallower range approach to reality.

(2) The longer the children stayed in the film-making workshop the more adequate became their analytic skills, in particular as shown by their scores on the embedded figures test. This is a measure which is usually quite resistant to change but in this experiment shifted markedly. Field independence is regarded as a cognitive style of wide characterological implication. The possessor is more analytic in perceptual and cognitive forms, and more autonomous socially than the field dependent person. The drop outs' scores on this variable did not change over the same period of time. In a final report these change scores will be graphed against the norms for age changes with children at this age level. Children who stayed beyond the first year also showed changes in the WISC picture arrangement scores. This task, very much like those in editing, requires the subject to arrange a panel of cartoons in the correct order. To do this the subject must notice small details and correspondences from one panel to the next. An improvement here is an improvement in seriational and organizational ability.

The analysis which pairs these shifts in cognitive scores with the observed categories of behavior in the workshop have yet to be punched and put on the computer, but all this will be forthcoming this year. We hope to discover which of the film-making activities are most predictive of the score shifts we have mentioned above. In addition analysis of the interviews, ego ideal tests, family background material, and measures of inner vs. outer control, will give us even more data on the kinds of children who appear to have benefited from this regime of film-making, as well as more detail on the manner of their improvement.

What should follow is a series of predictions about the type of film activity that is most closely associated with the improvement in the above cognitive competences. Our study has been a largely "naturalistic" one doing the best we could to carry out research in an unpromising situation from a research point of view. What our results should indicate however is the kind of variables most strongly associated with the cognitive change scores. What should then follow is a further more tightly constructed experiment in a controlled situation, where intensive application of the relevant variables (perhaps editing, perhaps a style of teaching -- we have hunches on these already and will have the data later), can be shown to progressively increase the cognitive scores. The implication for the use of films in education with selected children appear to be quite profound.

5. Film and Aesthetics in Childhood

The final section of our treatment of the data of this study will deal with the issues of aesthetics in film-making. Here we focus on the dialectical relationships between equilibrium and disquilibrium as it is produced by the film maker and how it changes developmentally with age. If time permits we will also have several studies of the way in which children perceive the films of other children.